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ABSTRACT

This report identifies a set of research questions for linguistics related to the Human Capital Initiative (HCI) launched by the National Science Foundation to increase understanding of the nature and causes of problems related to improving human resources. It is argued that the broad scope of linguistic inquiry in the United States has significant consequences for the six designated HCI areas of concern: workforce; education; families; neighborhoods; disadvantage; and poverty. Specific research issues address: language acquisition, maintenance, and loss; caregiver language role; normative language development among minority language groups; factors in language acquisition and socialization; language acquisition and socialization as a lifelong process; communication breakdown (intergenerational, bilingual, related to disabilities); individual and group beliefs about linguistic diversity, both within and between languages; social groupings based on speech; communication patterns characterizing multicultural communities; language role in construction of identity; transfer of language skill; learning of appropriate language registers; language demands on students; literacy and literacy education; language norms; language patterns and needs in the workplace; language patterns and creation and maintenance of disadvantagement; and language dynamics and poverty. Methodological needs are also discussed briefly. (MSE)

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Linguistics and the Human Capital Initiative

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LANGUAGE

Linguistics and the Human Capital Initiative

A Report to The National Science Foundation

Acknowledgments

This document identifies a set of research questions for linguistics related to the Human Capital Initiative (HCI) launched by the National Science Foundation. The HCI, which began as an initiative from the behavioral science community to the United States Congress in 1994, aims to increase understanding of the nature and causes of problems related to improving human resources. Although the concept of human capital is derived from economics, where it refers primarily to the labor market, the HCI has defined this concept to include social and cultural capital as well. The Division of Social, Behavioral, and Economic Research at the NSF organized an interdisciplinary set of working groups in 1994 to set forth a research agenda related to HCI. The broad-based research agenda is set forth in the document *Investing in Human Resources: A Strategic Plan for the Human Capital Initiative*. Six areas of emphasis are set forth in the report: workplace, education, families, neighborhoods, disadvantage, and poverty.

This document, written by Walt Wolfram and Natalie Schilling-Estes, represents the response of a panel of linguists to the above report. It sets forth a research agenda for linguistics related to the HCI. The Working Panel on Linguistics met in Salter Path, North Carolina, from September 13-15, 1995. The members of the committee were:

John Baugh, Stanford University
Courtney Cazden, Harvard University
Ceil Lucas, Gallaudet University
Charles Perfetti, University of Pittsburgh
Dennis R. Preston, Michigan State University
Bambi Schieffelin, New York University
Carmen Silva-Corvalán, University of Southern California

G. Richard Tucker, Carnegie Mellon University
Walt Wolfram, North Carolina State University

Also present at the meeting were Paul Chapin, Director of the Linguistics Program at the NSF; Natalie Schilling-Estes, Recorder and Project Coordinator; Kirk Hazen, Special Project Assistant; and Tracey Weldon, Young Scholar Observer. Judith Kroll, Penn State University, was a member of the panel but was unable to participate in the September meeting. Special thanks are due to Paul Chapin, who provided input and inspiration from the inception to the conclusion of the project, and to G. Richard Tucker for serving as a most effective meeting facilitator. The project was funded through a supplemental grant to NSF Grant No. SBR-93-19577. Additional copies of the report may be obtained from Walt Wolfram (919-515-4151 or wolfram@social.chass.ncsu.edu).

Linguistics and the Human Capital Initiative

Communication is a fundamental vehicle for realizing the full potential of humankind. Given the cognitive basis of the human language faculty and the sociocultural context in which language use is embedded, linguistic investigation has played and should continue to play a central role in advancing our basic understanding of the effective utilization of human capital. Linguistic research takes into account the empirical data of natural language systems and the abstract representations of language, combining cognitive and behavioral traditions of inquiry in its search for explanation.

The broad scope of linguistic inquiry in the United States has significant consequences for the six designated areas of concern identified in the report *Investing in Human Resources: A Strategic Plan for the Human Capital Initiative:* workforce, education, families, neighborhoods, disadvantage, and poverty. For example, linguistic science, including research funded through the Linguistics Program at the NSF, played an historic role in clarifying the distinction between *language deficit* and *language difference* with respect to the language varieties spoken by minority groups in the United States, especially African-American Vernacular English.

Prior to the pioneering work of linguistic researchers, minority language varieties were described as deviant and deficient approximations of an idealized standard variety. However, linguistic research beginning in the early 1960s revealed that language diversity reflected the intricate patterning of overlapping but independent linguistic systems. Thus, from the *deficit* perspective, a verbless sentence such as *She not here* was viewed as a deviant rendering of the standard English sentence *She is not here.* From the *difference* perspective, however, *She not here* is shown to be reflective of a language system which includes systematic, rule-governed absence of *be* forms--a feature common to many of the world's standard languages. This distinction between language difference and lan-

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guage deficit is not simply a matter of inconsequential labeling. It impacts the assessment of language capability and the language potential of minority populations in American society and thus affects fundamental issues of human language capital related to education, the workforce, poverty, and disadvantage.

As a result of linguistic research and description, educational and occupational reforms are taking place--reforms that seek to ensure that the language capabilities and the language potential of minority language populations in American society, including vernacular varieties and languages other than English, are recognized. For example, under the direct influence of these linguistic findings, the American Speech-Language-Hearing Association and the National Council of Teachers of English have issued significant policy statements asserting that a child's home language should be recognized and taken into account when assessing language development and ability.

Linguistic research funded by the NSF also played a significant role in shaping our understanding of the nature of American Sign Language (ASL) and the language competencies of members of the deaf community. Research begun in the 1960s led to the recognition of ASL as a natural language, one with all the productive language facilities of any other natural language system. This research triggered a generation of reforms related to the role of ASL in education and the workplace. Current research on ASL funded by the NSF seeks to correlate variation in ASL with family status, community-based social relations, and personal identity, issues that impact significantly on our understanding of the development and utilization of human capital in the deaf community.

Other projects funded by the NSF explore further dimensions of language related to the human capital initiative. For example, one NSF-funded project examines the sociolinguistic consequences of the transformation of isolated, self-sufficient communities into communities which are heavily

dependent on service-based contact with the outside world. Such transformations have been rapid and widespread in the U.S. since World War II. Thus, the linguistic study of communities undergoing such change is vital to the full understanding of the neighborhood, the family, the workforce, and disadvantage in today's society. Other NSF-funded research projects explore the language and cognitive abilities that underlie children's acquisition of their native language, as well as the relationship of these abilities to fundamental literacy skills. One project has discovered a surprisingly strong interdependence between reading and spoken language across a variety of writing systems, showing that children learn to read most effectively when they build on their knowledge of the sounds of spoken words. This finding suggests the importance of building literacy on speech foundations.

Although additional examples of the past and ongoing contributions of linguistic research to the development of human capital might be cited, there remain a number of basic linguistic issues yet to be researched. This report seeks to identify some of these major research themes, as formulated by the working committee on Linguistics and the HCI. It is not intended to be exclusive or exhaustive; it aims rather to be illustrative and indicative. In the process, this discussion should demonstrate how both the cognitive and behavioral foci of language investigation are central to the full range of concerns set forth for the HCI.

Research Issues Related to the Human Capital Initiative

Following are some research issues related to the specific social contexts and conditions highlighted in the HCI. Although the research questions are organized in terms of mutually exclusive topics, many of the issues cut across these divisions and impact several of the targeted areas of concern.

1. Fostering Successful Families

In recent decades, linguistic research has contributed significantly to increased understanding of the nature of the language acquisition process, particularly with respect to the earlier stages of acquisition. Substantial progress has also been made toward understanding the cognitive and behavioral processes involved in second language acquisition. Current approaches to language acquisition have tended to focus on the cognitive schema that underlies language acquisition, leaving unresolved a number of issues related to language socialization in familial and non-familial caregiving relationships. Furthermore, there remain many questions about the later stages of language acquisition and about language attrition, especially within bilingual families. Thus, investigation still needs to be undertaken with respect to a number of central issues related to the HCI:

- How are languages acquired and lost in different family configurations; e.g., in families with one bilingual and one monolingual parent, in families with deaf parents and hearing children?
- What is the relative significance of the different contributions of familial and non-familial caregivers in language acquisition and language socialization? What types of social interactions significantly shape the acquisition of language forms? What constitutes the language environment of the minority child, including the auditory and visual environment?
- What are the most appropriate methods for investigating and assessing normative language development in non-mainstream families in which minority languages or dialects are spoken?
- What is the cognitive and behavioral nature of the language acquisition process in children at the later stages of their language development? How can we describe and explicate language acquisition and language socialization as lifelong processes?

- What language practices and ideologies contribute to the breakdown of communication within the bi- or multilingual family, including the hearing/deaf family? What are the language barriers to intergenerational communication within the family, and how are they shaped by social factors, such as economy, social class, education, and gender?
- What is the role of family beliefs about linguistic diversity, including intra- and inter-language variation, in the language development and language socialization of children and in the development of children's linguistic ideologies?

2. Building Strong Neighborhoods

Language is invariably contextualized within a layered set of social affiliations that range from broad-based, national populations to small sets of peer interlocutors. Research has shown that patterns of social interaction may greatly influence language development and maintenance, including the development and maintenance of intra- and inter-language variation. However, the essential nature of and interrelationships among social networks, the geographic neighborhood, the larger speech community, and the national language populace need to be explicated. Questions such as the following need to be addressed in regards to our understanding of language in its social context and the effective utilization of human capital:

- What are the influences of neighborhood and other social configurations such as speech community and peer network on language acquisition and language socialization? How does participation in different speech communities affect patterns of language maintenance, change, and loss? What are the localized grammars and usage patterns that characterize neighborhoods and other social groupings?

- What are the significant social groupings that emerge in a person's social world based on shared ways of using and interpreting speech? Are there significant social groupings that do not depend on shared speech norms?
- What communication patterns characterize multilingual and multilectal neighborhoods and speech communities? How do linguistic systems develop, and how are different systems accommodated in the multilingual setting? How does language learning and language maintenance take place in this setting?
- What is the role of language and language diversity in the construction of individual and group identities, including ethnic, gender, and regional identity?
- What is the role of community-based organizations in facilitating the development of communicative skills? What sorts of language development programs are best suited to and will be most accepted by communities?
- How do neighborhood beliefs about language and language-related issues, including literacy, impact on the linguistic development of children, adolescents, and adults in given neighborhoods and communities?

3. Educating for the Future

Schools today are faced with an increasingly linguistically diverse student body. Virtually all educational systems now confront issues of multilingualism and multidialectalism as multiculturalism in our nation expands. Central language concerns range from policy decisions concerning the language of classroom instruction to the nature of language interactions between students and teachers, students and students, and students and the language of the curricula. Within this context, there is a need to know more about what role language plays in nourishing the cognitive and social

potential of students, both in present school situations and in anticipation of further education and post-formal education training. An increasing focus of linguistic science on classroom-based research has begun to depict the nature of language use and interaction in the classroom. At the same time, however, it has exposed an expanding set of research needs with respect to language and education:

- How is general language skill transferred to specific educational, social, and occupational venues? What is the relationship between situated and general language competencies?
- What are the cognitive and interactional processes whereby children and adults learn to communicate in registers appropriate for specific social contexts such as the school, the workplace, and other specialized social settings?
- How do changing conceptions of education and learning within the educational system and in society as a whole alter the language demands placed on students? For example, what are the cognitive and linguistic consequences of requiring children to present reasoned arguments rather than memorized facts?
- What are the effects of language awareness programs and other efforts directed toward increased knowledge of the structure of language and the patterning of linguistic diversity?
- What are the cognitive and behavioral processes underlying the acquisition of literacy? What is the precise nature of the process whereby readers acquire decoding and comprehension skills? How and to what extent does the child's membership in a minority language or dialect community affect the acquisition of these skills?
- How do educators' beliefs about language and language-related issues impact literacy and language education?

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- What is the role of community language models versus external standards in the development of language norms? What role do community language norms have in the assessment of linguistic ability and development in an educational setting?
- How can a linguistically informed understanding of writing systems, phonology, morphology, and syntax effectively contribute to the training of educators and literacy instructors?

4. Employing a Productive Workforce

The changing demands of many workplace situations necessarily involve shifting language demands as well. Matching the language needs of the workplace and the language capabilities and potential of an increasingly diverse workforce requires careful description of the language capabilities that typify successful language performance as well as the language obstacles that inhibit worker productivity in various work settings. Research on language issues in the workplace is expanding, as the connection between language demands in the workplace and worker productivity is more widely recognized. However, there remain a number of research questions that need to be addressed with respect to the role of language in the development and maintenance of a productive workforce:

- What are the language demands required in specific occupational areas, and what are the processes by which these skills are acquired? Which aspects of language ability are transferrable across various work settings and situations, and which are specific to particular situations?

- How do beliefs about language affect employability and the evaluation of employment performance? What types of minority language practices and competencies are thought of as resources and what types are thought of as liabilities? In what situations are minority language and dialect features accommodated and in what situations are they not?
- What is the nature of intercultural and interethnic language interaction in the workplace? What realms of discourse exist in the workplace, and who has access to them?
- What language demands are associated with the proliferation of non-linear texts? How is literacy defined in relation to the non-linear text, such as the interactive multimedia text, vis-à-vis the linear text? How do various types of literacy competency affect worker productivity?
- What are the present and projected language competencies, including competencies in languages other than English, necessary for participation in the global economy? How can second language proficiency be enhanced in order to enable more effective participation in a globally interdependent world?

5. Reducing Disadvantage in a Diverse Society

Language diversity is often linked with disadvantage in American society. While research on language variation has established that various types of linguistic discrimination have played a direct role in producing social and economic disadvantage, the way in which discrimination and disadvantage overlap and reinforce each other needs further examination. Furthermore, the relationship of language diversity and disadvantage needs to be explored in a wide array of social contexts in order to determine the overt and covert role of language in actuating and instantiating socioeconomic, sociopolitical, and socioeducational asymmetries among different social groups. Research issues related to language and disadvantage are as follows:

- What are the mechanisms whereby patterns of individual language expression lead to the stigmatization of and discrimination against individuals and groups? What are the processes that lead to language-based disadvantage?
- How does language-based discrimination compare with other types of discrimination based on race, class, sex, and age in terms of legal, educational, and employment outcomes?
- What role does language play in the implementation and maintenance of asymmetrical power relations? How are these relations manifested in various interactional configurations and in different situational contexts: for example, cross-gender interactions in the workplace, interethnic relations in the workplace, parent-child relationships in different family settings?
- What are the principles underlying the various discourses of power? How are these principles instantiated? How can they be confronted in striving toward more equitable and accessible socioeconomic status in a diverse population?
- How are language structures manipulated to gain economic and social advantage? What role do these structures play in discrimination, and what is their relative importance vis-à-vis social factors such as gender and ethnicity?

6. Overcoming Poverty and Deprivation

To a large extent, poverty stems from conditions within the family, the educational system, and the neighborhood--as well as from economic disadvantage. Considerations of language and poverty are therefore necessarily intertwined with issues related to the social conditions and contexts already discussed in this report. While linguistic research has shown that there is no inherent causal relationship between impoverished socioeconomic conditions and language capability, there often exist language correlates of impoverished economic status. For example, there is often a correlation

between low socioeconomic status and membership in a language or dialect minority group. We need to ascertain the nature of correlations such as this in more detail and determine why and how languages change in the process of overcoming poverty. Further research questions regarding language and poverty are as follows:

- What further correlations can be found between language variation and poverty? What are the culturally defined--as opposed to externally imposed--categories of linguistic status that are relevant to particular populations?
- Are there interactional language dynamics that characterize the economically impoverished, and how do these compare with those of the economically privileged? What are the specific language demands facing impoverished families as they seek to negotiate institutional support structures and government agencies?
- Are there linguistic folk beliefs underlying the correlations between language and poverty? If so, what effect do they have on the relationship between language and poverty?
- How does language relate to economic impoverishment vis-à-vis more broadly based and culturally determined conditions of disadvantage and discrimination? What attributes of language variation are used in reflecting and symbolizing poverty?
- What are the different language characteristics of impoverished adults who seek literacy training? What types of adult literacy programs for language minority groups are most effective? What types of skills and abilities need to be developed through these programs?

- How is language used by those who successfully overcome poverty? What language models and strategies are adopted in the process of overcoming impoverished economic conditions? How does the language situation of economically successful individuals compare with those who remain economically impoverished?

Data and Methodology

Research on language issues related to the HCI necessarily involves collecting data from multiple sources with multiple perspectives. Within linguistics, the traditions of data collection and methods of analysis have varied widely, depending on underlying assumptions about the nature of the data, the goals of research, and the dimensions of language being investigated. Data and methods range from reliance on the linguistic intuitions of a single speaker of one language as a representative of the universal language faculty to broad-based surveys of language use for regional and national populations. Research involving language as it relates to the HCI should involve the full gamut of qualitative and quantitative techniques currently employed in the field.

Particular research attention should be given to embedded studies that connect alternative forms of empirical analysis. For example, large scale, quantitatively based surveys may provide evidence that a particular social trend excludes or disadvantages particular kinds of language minority groups. While such studies point to socio-demographic patterns, they have limited explanatory potential. Smaller group, ethnogaphically based studies of particular neighborhoods, communities, families, and social situations should provide more insightful empirical evidence concerning socio-psychological dynamics and the values and viewpoints that underlie some of the language-based problems related to the utilization of human resources. Group and situation studies should be further complemented by the use of diverse interview techniques with individual language users in order to yield the most complete information.

Research on language-related issues also needs to take place in a range of contexts, especially in those social situations and contexts critical for success in the utilization of human capital. The growing research tradition in which language data are collected in a variety of settings, including educational, workplace, familial, and other social settings, needs to be continued and expanded.

At the same time, researchers should not neglect the productive and receptive capabilities of individual language users, including their intuitions about language forms and language uses. Such data are critical to understanding the cognitive processes underlying language structure and use, as well as the beliefs about language which often affect language use and attitudes toward different language varieties.

Finally, there is a need to develop more finely tuned diagnostic and evaluation procedures in examining language capability and potential. Appropriate instruments for assessing language use related to the utilization of human capital need to be developed so that appropriate identification and intervention strategies can be implemented. At the same time, there is a need to improve evaluation techniques for assessing the effectiveness of language-related policies and reform. There is a need to develop methods and models that can help us understand how and why particular language policies fail or succeed. In some cases, evaluative models from other disciplines may be adapted for the evaluation of language policy, but in other cases, innovative techniques and models may have to be developed given the unique and pervasive role of language in the effective utilization of human resources.

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